

What is claimed is:

1. An light-receiving circuit for receiving an optical signal with a predetermined transmission speed, comprising:

a light-receiving device;

5 a bias supply for providing a bias voltage to said light-receiving device;

a reference resistor for detecting a signal current generated by said light-receiving device; and

a feedback control circuit for receiving said signal current detected by said reference resistor and feedback controlling said bias supply such that said signal current is maintained to be a predetermined magnitude.

2. The light-receiving circuit according to claim 1, wherein said bias supply includes a high voltage source and a voltage control circuit serially connected to said high voltage source, said feed back control circuit feedback controlling said voltage control circuit.

3. The light-receiving circuit according to claim 1, further comprises a current mirror circuit having one input port connected to an output of said bias supply and two output ports, one of two output ports being connected to said light-receiving device and the other of two output ports being connected to said reference resistor.

4. The light-receiving circuit according to claim 1, wherein said feedback control circuit has a time constant greater than said predetermined transmission speed.

5. The light-receiving circuit according to claim 1, wherein said light-receiving device is an avalanche photodiode having an anode electrode and a cathode electrode connected to said bias supply.

5 6. The light-receiving circuit according to claim 1, wherein said light-receiving device is a PIN photodiode having an anode electrode and a cathode electrode connected to said bias supply.

7. The light-receiving circuit according to claim 1, further comprises a
10 pre-amplifier connected to said light-receiving device.

8. An light-receiving circuit for receiving an optical signal having a predetermined transmission speed, said light-receiving circuit comprising:

 a high voltage source;

15 a voltage control circuit connected to said high voltage source and outputting a controlled bias voltage;

 a current mirror circuit connected to said voltage control circuit, said current mirror circuit receiving and outputting said controlled bias voltage;

 a photodiode connected to said current mirror circuit for receiving said
20 optical signal and generates a signal current corresponding said optical signal by providing said controlled bias voltage;

 a reference resistor for detecting said signal current; and

 a feedback control circuit connected between said reference resistor and said voltage control circuit, said feedback control circuit feedback controlling said
25 voltage control circuit such that said signal current detected through said reference resistor is maintained to be a predetermined magnitude,

wherein said photodiode is an avalanche photodiode.